

Claims

1. A method for cell culture which continuously controls dynamic conditions by application of hydrostatic pressure on a culture liquid in a condition for culturing cells by centrifugal force, thereby giving stimulation to the cells.

5 2. A method for cell culture according to claim 1, wherein for the controlling of dynamic culture condition by application of hydrostatic pressure, application of the hydrostatic pressure to the cells is periodically changed or maintained for a certain period of time by application of centrifugal force.

10 3. A method for cell culture according to claim 1 or 2, wherein the hydrostatic pressure is applied in a range of 60MPa or less.

4. A method for cell culture according to any one of claims 1 to 3, wherein the hydrostatic pressure is applied within a range from 0.5 sec to 6 weeks.

15 5. A method for cell culture according to any one of claims 1 to 4, wherein the application of the hydrostatic pressure is conducted by controlling the number of rotations of a centrifugator.

6. A method for cell culture according to any one of claims 1 to 5, wherein the temperature and the atmosphere are controlled.

7. A method for cell culture cells according to any one of claims 1 to 6, wherein cells are cultured together with various kinds of biomaterials.

20 8. An apparatus for the cell culture having a cell-culturing device supported by a rotational shaft in a sealed container for providing cells with hydrostatic pressure by centrifugal rotation.

25 9. An apparatus for the cell culture according to claim 8, wherein comprising a control mechanism for controlling the rotation time and the rotation speed of the cell-culturing device.

10. An apparatus for the cell culture according to claim 8 or 9, wherein the number of rotations is controllable within a range from 10 to 25,000 rpm for providing the hydrostatic pressure of 60 MPa or less.

11. An apparatus for the cell culture according to any one of claims 8 to 10, wherein the inside of the cell culturing device is divided so that a plurality of types of cells can be cultured simultaneously.

5 12. An apparatus for the cell culture according to any one of claims 8 to 11, wherein an injection port and an exhaust port for the gaseous atmosphere into and out of the sealed container, and a control mechanism for injecting and exhausting the atmospheric gas are provided.

13. An apparatus for the cell culture according to any one of claims 8 to 12, wherein a control mechanism for the temperature in the sealed container is
10 provided.